Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Pediatric

Epidemiological and Clinical Profile of Parotitis in Children

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DOI: https://doi.org/10.36347/sjmcr.2025.v13i12.002 | **Received:** 21.09.2025 | **Accepted:** 06.11.2025 | **Published:** 03.12.2025

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Abstract **Case Report**

Introduction: Salivary gland pathology in children is complex and poses diagnostic and therapeutic challenges. ***Objective:*** To analyze the epidemiological, clinical, paraclinical, therapeutic, and evolutionary aspects of parotid pathologies. Materials and methods: We conducted a retrospective study on a series of four cases of parotitis collected in the Pediatrics A department of the Mohammed VI University Hospital in Marrakech between April 2016 and November 2022. Results: The patients included three boys (75%) and one girl (25%), with a mean age of 7 years (45 days to 11 years). The clinical symptoms were dominated by cervicofacial swelling in all patients, pain in all patients (100%), and cervical lymphadenopathy in three patients (75%), with pus discharge through the Stenon duct in 25%. The average time to consultation was 11 days. It should be noted that two cases were classified as acute suppurative parotitis (50%), while the other two were recurrent juvenile parotitis (50%). Cervical ultrasound was the most commonly requested paraclinical examination in our patients (100%). Immunodeficiency testing was negative in all patients. Puncture was performed in 50% of cases, with isolation of streptococcus in 25% of cases and staphylococcus aureus in 25% of cases. Staphylococcus aureus in 25% of cases. Drainage was performed in only one patient. Treatment consisted of antibiotic therapy in 100% of cases, with amoxicillin clavulanic acid in 75% and C3G in 25% of cases. A favorable outcome was observed in 75% of cases, with resolution of clinical symptoms. An increase in the number of flare-ups in a patient with recurrent juvenile parotitis justified a cervical-facial MRI. ***Conclusion:*** Parotitis is a heterogeneous entity. The etiological diagnosis is guided by clinical and radiological findings and is based on bacteriological analysis of the puncture. A delayed diagnosis combined with inadequate initial treatment further worsens the prognosis.

Keywords: Parotitis, children, parotid gland, infection, ultrasound, antibiotic therapy.

Observation No. 1

This is a seven-year-old boy, enrolled in school, vaccinated for his age according to the Moroccan immunization program, who consulted for right-sided parotid enlargement, which then became bilateral seven months ago, associated with episodes of fever treated symptomatically and progressing against a background of pain that worsened during chewing (Fig. 1).

Examination of the oral cavity revealed redness with pus discharge from the opening of Stenon's duct after massage of the parotid glands. There was no clinically detectable cervical adenopathy. The rest of the physical examination was unremarkable, including examination of the other salivary glands, external genitalia, abdomen, and neurological examination. The diagnosis considered at this stage, in the context of uncomplicated acute bilateral parotitis, was mumps parotitis, and was treated as such, resulting in recovery after one week. The course of the disease was marked by the occurrence of four

episodes similar to the first after an interval of four months, two months, and three months, respectively. A biological assessment including a complete blood count, CRP, blood urea, and fasting blood glucose was normal, with an ESR of 26 mm in the first hour. The tuberculin skin test was 0 mm.

A cervical ultrasound was requested and revealed moderate hypertrophy of the parotid glands with accentuated septation, without calcification, also affecting the submandibular glands, associated with centimeter-sized lateral cervical lymphadenopathy, without identifiable ductal calculi. the immune deficiency assessment was negative, and the patient underwent antibiotic therapy with amoxicillin and clavulanic acid at each episode, with good improvement.

Observation No. 2

The second patient is a 14-day-old newborn who has had a fever of 38.9°C for two days, has refused to feed, and has an enlarged parotid gland that has become very painful to the touch, prompting the parents to seek emergency care (Figure 1). He is a newborn from a well-monitored pregnancy, carried to 37 weeks, born hypothermic with a birth weight of 2100 g, male. Negative infectious history, delivery was vaginal. The baby was breastfed immediately after delivery and was exclusively breastfed.

The mother noticed a drop in weight over the previous 5 days. He had never presented with any symptoms before. Upon

Admission to the department, He was whiny, his hemodynamic status was stable, and his rectal temperature was 38.9°C. Clinical examination revealed facial paralysis with inability to close the right eye and inflammatory swelling of the right parotid gland, which was very painful on palpation, associated with a weight loss of 120 g with mild dehydration at 5%. The newborn was experiencing intermittent apnea. This led to the patient being immediately admitted to the intensive care unit to start antibiotic therapy with ceftriaxone (100 mg/kg/day) and gentamicin (5 mg/kg/day) for 48 hours. The clinical outcome was unsatisfactory, leading to a changé in antibiotic therapy to ceftazidime, with a favorable outcome. Initial additional tests showed a moderate inflammatory syndrome with leukocytosis at 15,240 cells/mm3, plasma C-reactive protein (CRP) at 35 mg/dl initially, then 61 mg/dl after 48 hours of treatment, falling to 3.7 mg/dl 48 hours after the change in antibiotic therapy. Blood cultures and cultures of cerebrospinal fluid and urine were sterile. Bacteriological sampling at the opening of Stenon's duct revealed the presence of Staphylococcus aureus, and the immune deficiency test was negative. Clinical examination of the parotid gland one week after the end of antibiotic treatment was normal, and parotid ultrasound showed no abnormalities, in particular no intraparotid ductal dilatation.

Observation No. 3

The second clinical case is a 25-day-old newborn, premature at 35 weeks gestation, admitted with a fever of 40°C with intense swelling of the parotid gland, febrile convulsions, tremors, and refusal to feed for 36 hours. Clinical examination revealed a pink, responsive newborn, gesticulating little, whimpering and presenting generalized hypotonia with a highly inflammatory mass in the right parotid gland with pus discharge but no signs of compression of the mass. Ultrasound showed the presence of a parotid abscess and the inflammatory markers were very high. The pus culture found Staphylococcus aureus. The immune deficiency test was negative. The abscess was drained, and the patient was placed on triple antibiotic therapy with ceftriaxone, flucloxacillin, and gentamicin, with good progress noted at the end of treatment.

DISCUSSION

Recurrent parotitis in children occurs between the ages of three and six, with a slight predominance in males. The first outbreaks, which occur around the age of four to six, are often confused with mumps, but the recurrence of episodes confirms the diagnosis. The germs responsible are commensals of the oropharynx, without it being possible to establish a link between the septicity of the oral environment and the recurrence of infectious episodes [1]. Chronic parotiditis, on the other hand, is not a clinical entity, but rather the result of repeated episodes of salivary retention, recurrent parotiditis in children that persists beyond puberty, or immune sialadenitis. The histopathological damage to the affected parotid gland The histopathological damage to the affected parotid gland takes the form of lymphocytic infiltrates that tend to form lymphoid follicles associated with small ductal dilations. These are clearly visible on sialography and are called sialectasias [2]. Various theories have attempted to elucidate the etiopathogenesis of recurrent parotitis in children. Its self-limiting nature, the sex ratio favoring boys, and the absence of autoimmune antibodies rule out and make the autoimmune origin of this disease unlikely [3]. Ericson et al. [4] found no evidence to support the hypothesis of an allergic origin for this condition. However, Reid et al. [5] suggest that genetic factors are involved in the etiopathogenesis of recurrent parotitis

in children, as they found that it can be transmitted in an autosomal dominant pattern with incomplete penetrance. In addition, retrograde infection is one of the causes of this condition, especially in cases of dehydration, since the latter leads to a decrease in salivary secretion from the parotid gland, which, even under normal conditions, remains low, providing a favorable environment for the occurrence of bacterial superinfection [6]. The clinical picture combines painful swelling, most often unilateral, of the parotid region, homolateral jugular-carotid adenitis, and turgidity of the meatus of Stenon's duct, allowing a few drops of purulent saliva to ooze out when manual pressure is applied to the gland. all of which occurs in the context of moderate deterioration in general health, dominated by asthenia, which may precede the symptoms by a few dozen hours. Blood tests, which are generally requested to investigate an inflammatory, metabolic, or hematological etiology, are negative in cases of recurrent parotitis in children, which supports the idiopathic nature of this pathology. At the clinical stage, in addition to recurrent parotitis, other infectious parotitis conditions may be considered, such as: viral parotitis, in this case mumps, suppurative parotitis, mainly in the neonatal period, and superinfected lithiasic parotitis, which remains very rare in children. Parotid tumors are rare, but they should be suspected in the presence of any firm swelling that

develops gradually outside of an inflammatory context; this

CONCLUSION

Recurrent parotitis in children is a rare condition, which poses practical problems in terms of both diagnosis and treatment, with salivary endoscopy and sialography remaining the mainstay of the therapeutic arsenal available to practitioners.

Declaration of interests: The authors declare that they have no conflicts of interest in relation to this article.

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